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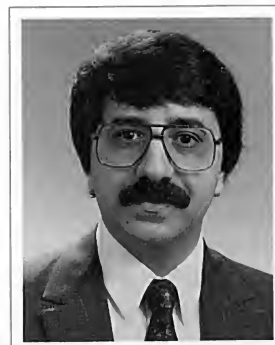
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THE HEMI-SYNC PHENOMENON: IN SEARCH OF EMPIRICAL THEORIES



by Mohammad R. Sadigh, Ph.D.

Mohammad Sadigh is director of psychology and psychophysiological services at The Gateway Institute, a center for pain and stress management in Bethlehem, Pennsylvania. He practices psychotherapy and biofeedback and is in charge of the center's neuropsychological laboratory. Computer-assisted brain mapping is his primary area of research. Here Dr. Sadigh offers two theories based on his observations and ongoing independent research with Hemi-Sync.

Three years ago, with much "healthy" scientific doubt, I began studying the effects of Hemi-Sync on the electrocortical activity of human subjects. In study after study, I have been impressed by the effectiveness and the versatility of this audio technology to guide and entrain the brain to enter a variety of states of consciousness. These days, brain entrainment modalities are in vogue. Unfortunately, however, entrepreneurs and business people selling gadgets and tapes seem to benefit more than the consumer. Therefore, it is quite refreshing to know that there is a brain-entrainment modality that actually works. In fact, I am convinced that Hemi-Sync goes beyond "blind" entrainment and consequently avoids some of the dangers of underdeveloped technologies that clearly have the potential to harm those using them.

Although there is a wealth of clinical data with regard to the beneficial effects of Hemi-Sync, there is a lack of empirical theories explaining the phenomenon. And yet, without sound, testable theories, we are liable to lose momentum in our research and clinical work, and something that we know has great value is likely to be considered a fad, a gimmick, something "unscientific." As Louis Pasteur, the great scientist, once stated to a group of medical students: "Without theory, practice is but routine born of habit. Theory alone can bring forth and develop the spirit of invention. It is you especially who are obliged not to share the opinion of those narrow minds who reject everything in science which has no immediate application" (Reik 1948, ix). Hemi-Sync has many applications, and there are even more applications ready to be unveiled as we attempt to construct new theories.

Based on my empirical research, I wish to propose two theories of Hemi-Sync in this paper. Before introducing these theories, by merely reflecting on the obtained data and observations in our laboratory, I wish to address a few questions raised in the scientific community with regard to the effectiveness of Hemi-Sync. Dr. Lester Fehmi, one of the foremost authorities in the field of applied psychophysiology and brain

research, once stated that he believed that Hemi-Sync could drive the brain to enter certain states. At the same time he emphasized, “. . . but it doesn't teach you how to get there. It's like a pill; in a way you don't know how the pill works . . . and you may end up somewhat refreshed but if you had the option to get on a device that would allow you to learn to create the permissive conditions for the creation of this synchrony, then you'd be in much better shape, because then you could apply that anywhere without the tools and begin to learn how to function in everyday activity while doing that” (Hutchison 1986, 222). Another prominent scientist, Dr. Elmer Green, remarked that we should not try to drive the brain but to help people learn to achieve hemispheric synchronization without external sources of brain entrainment (Hutchison 1986).

. . . it is quite clear that after a brief period of exposure to Hemi-Sync frequencies, subjects can summon the beneficial effects of this technology at will . . .

These are indeed legitimate and important questions that require scientific and databased answers. Is Hemi-Sync a pill? Are we promoting dependency on a tape and a tape recorder for the rest of one's life? From solid electroencephalographic data that we have collected in our neuropsychological laboratory, it is quite clear that after a brief period of exposure to Hemi-Sync frequencies, subjects can summon the beneficial effects of this technology at will without the use of any external sources of entrainment. In several studies it was clearly demonstrated that subjects, by merely counting from one to eleven and saying “Access Channel open,” were able to achieve full bilateral synchrony (Sadigh 1990, 1991a). Furthermore, unlike EEG biofeedback training, which is limited to training in a specific state of consciousness (i.e., cognitive or somatic relaxation), Hemi-Sync can promote training in a variety of states ranging from active concentration to sleep. To those who have understandably questioned the effectiveness of Hemi-Sync and its potential to be more than an external driver, we offer our data and findings—let them speak for themselves.

Theories of Hemi-Sync

Based on the findings of several studies presented in the HEMI-SYNC™ JOURNAL (Sadigh 1990, 1991a, 1991b), I wish to propose two theories of Hemi-Sync, namely the State Enhancement Theory (SET), and the Hemispheric Communication Theory (Hemi. Com.).

The State Enhancement Theory (SET)

One important observation that we made in a number of Hemi-Sync studies was that subjects exposed to the same Hemi-Sync signals achieved bilateral synchronization at different frequencies. One explanation for this phenomenon is that Hemi-Sync goes beyond “blind” entrainment. That is to say, unlike other brain-entrainment modalities which force the brain to produce certain frequencies, Hemi-Sync actually collaborates with the brain to enhance its naturally dominant state.

In summary, according to this theory :

Within a relatively defined frequency range, Hemi-Sync guides the brain to enhance and synchronize itself at its own dominant and naturally occurring frequency and state.

Should we be able to continue to support this theory with further research, we may conclude that Hemi-Sync is indeed a technology beyond entrainment and, for that matter, one of the safest modalities for health improvement and enhancement.

The Hemispheric Communication Theory (Hemi. Com.)

Based on studies observing the electrocortical activity of patients undergoing psychotherapy, it appears that moments of insight and “clarity” are preceded by moments of bilateral synchrony (Sadigh 1991b). This is an important observation, since in psychotherapy insight denotes an integration of cognition (left brain) and affect (right brain).

In summary, this theory may be stated as follows:

Certain Hemi-Sync frequencies allow various unconscious ego-defense mechanisms to be transcended, which will in turn facilitate communication between the two hemispheres. This therapeutic communication is likely to allow physical and psychological healing to follow. [Also see Sadigh 1991b.]

Again, further research is required to support and expand this theory. Should this theory withstand the test of time, it will provide us with a new way of understanding the human mind and how we may promote its healing.

Conclusion

The purpose of this paper was twofold. First, a number of questions have been raised in the scientific community with regard to the effectiveness and the potentials of Hemi-Sync. I believe it is time for us to address some of these questions by reflecting on empirical data that has already been collected and analyzed. Secondly, two theories of Hemi-Sync were presented in this paper. In my view, based on these theories, it is imprudent to think of Hemi-Sync as a mere entrainment audio technology. It is a phenomenon worthy of thorough scientific research since it may provide us with many answers about the functioning of the human mind.

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COPING WITH SURGERY



by Mary Lou Ballweg

Endometriosis is a frequently misdiagnosed and misunderstood disease process in which tissue normally lining the uterus is also found in the abdomen, and on the ovaries, bowel, and bladder. The resulting internal bleeding, scar tissue, and inflammation produce a host of debilitating symptoms which encompass, but are not limited to, chronic pelvic pain and painful menstrual periods, painful intercourse, infertility, bowel and bladder problems, chronic fatigue, and low resistance to infections. The cause is unknown and no cure is available. Treatment choices include a spectrum of pain medications and a variety of traditional surgeries and new laser techniques to remove the growths. Unfortunately, these frequently recur, necessitating repeated surgeries or hysterectomy as a last recourse. Endometriosis affects an estimated five million women in the United States and another one-half million in Canada. Sufferers range from eleven to fifty years of age and may be of any race.

Diagnosed with endometriosis in 1978, Mary Lou Ballweg co-founded the Endometriosis Association with Carolyn Keith in 1980. The organization offers assistance and support to those directly affected, educates the public and medical community, and promotes research related to endometriosis.

The following article on Ms. Ballweg's use of the EMERGENCY SERIES to decrease pain and anxiety relative to surgery is excerpted and reprinted from the Endometriosis Association Newsletter, Vol. 12, No. 6, with its permission. The Association has recently acquired 100 EMERGENCY SERIES sets for the benefit of their members, support groups, and chapters across the U.S. and Canada. For more information, write to Endometriosis Association, Inc., International Headquarters, 8585 North 76th Place, Milwaukee, WI 53223. You may also telephone (800) 992-3636 in the United States or (800) 426-2363 in Canada.

Facing surgery is hard! Fortunately, there's a new development in this area that can make a major difference.

It's hard to put into words the anxiety that occurs for most of us when facing surgery, even when we're well-prepared and feel confident in our surgeon. It seems that every day before surgery a certain anxious gloom pervades the mind at least part of the time and grows in the days just before the procedure. Last year, when I was facing surgery again (my fifth for endo) I was fortunate to find an aid that made this surgery far more emotionally manageable than my earlier surgeries.

At the American Association of Gynecologic Laparoscopists' annual meeting in November 1990, Dr. Ronald Burke of the University of Massachusetts Medical School presented the results of a study by Suzanne Jonas, Ed.D.; the Fertility Institute of Western Massachusetts; and himself, using special relaxation audiotapes. In the study, one group of patients used the tapes before coming to the hospital, while under anesthesia, and in the recovery room, while another group of patients did not use the tapes. All the patients underwent diagnostic or operative laparoscopy. The patients using the tapes had signif-

icantly less pain and nausea following the operation, and returned to full activity quicker than the group that had not used the tapes.

Another study, reported in *The Lancet* (August 27, 1988, Vol. 2, No. 8609, p. 491), found that patients who listened to a relaxation tape during hysterectomy recovered more quickly with less fever and significantly less gastrointestinal problems than patients who listened to a blank tape. Other studies have suggested that operating room sounds may be registered in the brain even though the patient is under general anesthesia and these sounds may influence recovery.

So part of the effect of the tapes, besides putting positive, affirming, reassuring thoughts in the patient's head, may be that they block out operating room sounds and statements that could be disturbing. Some anesthesiologists now make gentle suggestions to the patient, such as telling the patient, still under anesthesia, that the operation is over and was a complete success and that she will be waking soon and will do well, because of these studies.

I decided to try out the tapes used in the Jonas/Burke study for my surgery last year and share the experiences with our members, who face so many operative laparoscopies. My doctor (my general practitioner) was supportive and gave me another article on the subject.

I contacted The Monroe Institute in Faber, Virginia, which produces the specialized tapes that were used in the Jonas/Burke study. The Institute is a nonprofit educational and research organization devoted to understanding human consciousness and practical applications of this understanding.

I was sent the set of six tapes called the *EMERGENCY SERIES*, surgical support tapes, which the brochure in the cassette holder said was "designed to assist individuals through a physical crisis such as major illness, traumatic injury, or surgery." The tapes included one for use before surgery, one for use during surgery, one for the recovery room, one for recuperation from surgery, one called *Energy Walk*, and one called *Surf*, recorded surf sounds.

The tapes include the blended, sequenced sound patterns that are the result of research by Robert Monroe and colleagues at The Monroe Institute. Their work has identified specific signals, called "binaural beats," which are fed into each ear through stereo earphones to produce synchronization of the left and right hemispheres of the brain, (which The Monroe Institute calls "Hemi-Sync"). These audio signals help reduce "that constant psychological turmoil that people go through" with surgery, says one surgeon who has used them for his patients.

Binaural beats are not the same as the subliminal messages that some tapes advertise. Subliminal messages means the message is not audible. On these tapes, in addition to the special modulated frequencies to control brain waves, the voice, if one is present, is audible.

The voice on The Monroe Institute tapes is a very soothing one which encourages the listener to relax. Tape One, the *Pre-Op* tape, for instance, is a wonderfully relaxing, affirming tape in which the narrator takes the listener step by step through conscious relaxation head to toe. *First, let your jaw, let your jaw go limp and relax, let the muscles and nerves of your jaw go limp and relax. Now, your eyelids. Let your eyelids relax and go limp. Now, let your lips, let the muscles and nerves in your lips relax, relax easily and go limp. Now, the muscles in your forehead . . .* Chances are that by the end of this tape you're asleep or at the least, very relaxed and no longer anxious.

The instructions note that you should use the *Pre-Op* tape as many times as possible prior to surgery, both before and after admission to the hospital. I found this tape unbelievably soothing and used it many times before surgery. One night I found it hard to sleep—I was anxious and the persistent, intermittent sound of the foghorn out on Lake Michigan bothered me. "I hope the tape will knock out the foghorn sound," I thought as I put the Walkman™ on. It didn't, but it made me feel so good and so relaxed, that I wasn't bothered by the foghorn anymore. After the surgery, I realized that the tape did the same thing with pain and discomfort—it was still there but it didn't bother me, just as the tape said.

As I wrote at the time (Shirley Bliley of the Institute had suggested I keep notes on my use of the tapes):

Several times anxiety hits me and I listen to the *Pre-Op* or, a couple of times, the *Intra-Op* tape, and find despite my thoughts still being somewhat anxious, I'm surprisingly calm and feel an inner peace. After a disconcerting doctor visit and as anxiety builds the night before, the tapes help.

The morning of the surgery I listen to them at 5:15 a.m. on the way to the hospital. I listen waiting to be taken down to surgery and in the pre-op area. I discussed them with the anesthesiologist—he's very interested and more than willing to help by being sure the earphones stay on during surgery and replacing the *Intra-Op* tape with the recovery room tape when I go into the recovery room.

I woke in the recovery room to the soothing sounds of the recovery tape . . . *Let the others help you restore your balance . . . You accept the green, blue, and purple healing energy that they are bringing to you; the bright healing, warm energy they are giving to you . . . The nerve signals of pain flow through you and do not register during this period now . . .*

It was a far better way to wake than my previous four surgeries when I remembered waking either to searing pain (in the laparotomies) or the dread feeling of not quite knowing where I was and being in a haze. The tape made me feel that although I was feeling pain, I would be able to manage it and I was! It helped me feel that I could manage until my blood pressure came up a little and they could give me an injection of Demerol™.

Later I learned that while I was listening to the *Intra-Op* tape during the surgery, the surgeon and anesthesiologist listened to some of the *Recovery* tape. In one part of the tape it says that the caregiver should check that the message is going into the right ear of the patient. The surgeon and anesthesiologist joked that they hadn't known they should check and wondered if it had rearranged the hemispheres in my brain for me. Was I left-handed now?!

Tuesday, the day after the surgery: On the *Recuperation* tape, the soothing voice says that the pain signals are no longer important, for now, to allow you to sleep. I like that very much—a way to be aware of what's happening to your body so you can take the necessary pain meds or rest or not try to do too much, yet at the same time not to let the pain and discomfort messages take over. It helps impart or put you in touch with a wonderful sense of equilibrium.

Wednesday, the second day after surgery: I feel better but then become restless, a little blue, irritable about the music and voices upstairs—is this the third-day blues? I put the *Recuperation* tape on and despite my restlessness and inability to sleep find a sense of peace and relaxation. It's amazing how effective these tapes are. As one woman wrote about her spleen surgery in The Monroe Institute newsletter, "Every sound and

word took on a special therapeutic meaning."

Fifth day after surgery: So sore—I overdid it yesterday! I felt so *good* I forgot I wasn't really supposed to be out more than three or so hours. I feel good, though sore, just no energy. I want to read but just don't have the energy, not really tired enough to sleep so sew instead while listening to the post-op tape called, appropriately, *Energy Walk*. The soothing voice guides the listener to imagine being on a beach, a grassy meadow, and looking at your favorite tree at the end of the meadow. It's really quite beautiful.

The tape even helped us on the trip, apart from the surgery, when our nine-year-old developed bronchitis and a touch of pneumonia. Imagine being cooped up with a sick nine-year-old in a small motel room while awaiting surgery. She was so uncomfortable and restless she couldn't sleep, so I gave her the *Energy Walk* tape because the description says, "Play *Energy Walk* . . . whenever s/he is restless, in pain, or unable to sleep." Our daughter went from being restless, frustrated (and frustrating her parents) to lying perfectly still, eyes closed, smiling, relaxed. "This is wonderful, Mom. It's so beautiful. I feel so good." She drifts off into a light nap after a while.

The tapes are also very useful in pain management. One of them, *Recuperation*, is also sold separately under the title *Pain Control*.

For surgical use of the tapes, be sure to use a Walkman™ or other battery-operated [tapeplayer] with automatic reverse so that the tape can keep playing no matter how long the surgery or recovery time.

We encourage chapters and support groups to obtain a set for lending to members at the time of surgery. Encourage your doctor and hospital to obtain a set for loan to women at the time of surgery.



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